What is claimed is:

An RF package comprising: 1. 2 a multilayered dielectric substrate on which first and second dielectric/substrates are formed, said 3 4 multilayered dielectric substrate having a cavity where a semiconductor element/is to be mounted; 5 a feed-through for connecting an inside and 6 outside of said cavity and comprised of a coplanar line 7 formed on said first dielectric substrate and an inner 8 layer line obtained by forming said second dielectric 9 10 substrate on said coplanar line, said coplanar line and 11 said inner layer line sharing a strip-like signal conductor; and 12 13 metal members formed at a connection interface 14 between said coplanar line and said inner layer line on 15 two sides of said signal conductor.

- 2. A package according to claim 1, further
- 2 comprising:

3 first ground conductors formed on an upper

surface of said first dietectric substrate and arranged

5 on two sides of said signal conductor to be away from

6 each other at a predetermined distance;

7 a second ground conductor formed on said

- 8 second dielectric substrate; and
- 9 a plurality of first via holes formed in said
- 10 second dieledtric substrate to connect said first and
- 11 second ground conductors to each other at positions away
- 12 from said connection interface between said coplanar
- 13 line and said inner layer line.

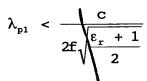


- 3. A package according to claim 2, wherein a distance λ between said connection interface between
- 3 said coplanar line and aaid inner layer line and a
- 4 center of one of said first via holes which is at an end
- 5 nearest to said connection interface is represented by
- $\lambda < \frac{c}{2f\sqrt{\epsilon_r}}$
- 7 where c, f, and ϵ_r respectively indicate a speed of
- 8 light, a signal frequency, \and a specific dielectric
- 9 constant of said dielectric\substrate.
 - 4. A package according to claim 2, wherein
- 2 said first via holes \are arranged on two sides
- 3 of said signal conductor at a predetermined pitch, and
- a pitch λ_{p2} of said first via holes in a
- 5 signal propagating direction is represented by
- $\lambda_{p2} < \frac{c}{2f\sqrt{\epsilon_r}}$
- 7 where c, f, and ϵ_r respectively indicate a speed of

- light, a signal frequency, and a specific dielectric 8
- constant of said dielectric substrate.
 - A package according to claim 4, wherein a 5.
- pitch w of said first via hole in a direction 2
- perpendicular to the signal propagating direction is
- indicated by

6. A package according to claim 4, further

- 2 comprising:
- a third ground conductor formed on a lower 3
- 4 surface of said first dielectric substrate; and
- 5 second via holes formed in said first
- 6 dielectric substrate to connect said first and third
- 7 ground conductors to each other, said second via holes
- being arranged on two sides of salid signal conductor at 8
- 9 a predetermined pitch.
 - A package according to claim 6, wherein a
- pitch λ_{p1} of said second via holes in the signal
- propagating direction is represented by 3



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- 8. A package according to claim 2, wherein said
- 2 metal members have ends on a signal conductor side that
- 3 are aligned with ends of said first via holes on the
- 4 signal conductor side.
 - 9. A package according to claim 2, wherein said
- 2 metal members connect said first and second ground
- 3 conductors to each other at said connection interface
- 4 between said coplanar line and said inner layer line.
 - 10. A package according to claim 1, wherein said
- 2 metal members are metal posts.

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11. A package according to claim 1, wherein said metal members are semi-cylindrical metal electrodes.



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- 12. A package according to claim 1, wherein said metal members are metal plates.
- 13. A package according to claim 1, wherein said multilayered dielectric substrate is formed of co-fired ceramics.